

DEPARTMENT OF THE ARMY
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CEMP-R

Design Guide
No. 1110-1-1

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ENGINEERING AND DESIGN
DESIGN GUIDANCE FOR GROUND WATER/FUEL EXTRACTION
AND GROUND WATER INJECTION SYSTEMS

1. Purpose. This design guide (DG) provides guidance for the basic design, installation and operation of ground water extraction and ground water injection systems for the cleanup of contaminated ground water, exclusive of any treatment systems. General guidance on ground water extraction (GWE) already exists (see references below). The intent of this DG is to document lessons learned from experience and to provide a systematic approach to the installation, operation and trouble-shooting of systems. In addition, this DG identifies aspects of ground water/fuel extraction and ground water injection systems that have led to poor performance and provides solutions to these problems. The DG provides trouble-shooting charts that list problems, causes, solutions and preventative measures. The DG then provides a series of checklists for the user to follow during the implementation of a project. The checklists identify information and data needs that, when addressed, greatly improve the likelihood for project goals to be achieved.

2. Applicability. This DG applies to all HQUSACE elements, major subordinate commands (MSC), districts, laboratories, and field operating activities (FOA) responsible for HTRW remediation projects. The engineering and design procedures are applicable to all Corps of Engineers projects. If required, ground water cleanup is conducted at both Federal and commercial sites, including Department of Defense installations. This DG was written for single and multi-well systems related to the cleanup of ground water and light non-aqueous phase liquids (LNAPLs).

3. References. References are provided in Appendix A.

4. Distribution Statement. Approved for public release, distribution is unlimited.

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5. Explanation of Abbreviations and Terms. Abbreviations and acronyms used in this DG are contained in Appendix C.

FOR THE COMMANDER:



3 Appendices
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